Obstetrics and Gynecology

General Management

- Additional history to gather for patients
  - Of childbearing age
    - Possibility of pregnancy?
    - Currently pregnant?
    - Date(s) of last menstrual period
    - Gravida and Parity (Parity: term births, premature births, abortions, living children)
  - Who are known to be pregnant
    - Due date
    - Number of fetuses/ expected babies
    - Complications with current pregnancy
    - Complication with previous pregnancies
    - Details of prenatal care
    - Recent infection
    - Blood type and Rh
      (Rhogam for Rh- moms at 27 weeks)
    - Fetal activity
  - Who are in labor
    - Onset, frequency, intensity and duration of contractions
    - Rupture of membranes? (and color/ presence of meconium staining)
    - Presentation or showing? (actually look!)
    - Dilation, effacement and station (if available from sending; do not perform!)
- Additional considerations
  - Left lateral recumbent position
  - Delivery in aircraft may not be possible (therefore consider alternative options with imminent delivery)
  - Fetal heart tones should be monitored with gestational age >25 weeks

Specific Considerations

- Vaginal Bleed
- Ectopic Pregnancy
- Pregnancy Induced Hypertension, (Pre-)Eclampsia and HELLP Syndrome
- Preterm Labor & Tocolytics
- Standard Delivery
- Abnormal Delivery
- Management of the Newborn
- Trauma in Pregnancy: simultaneously address Trauma and Obstetrics and Gynecology

Associated Procedures

- Fetal Monitoring
- Postmortem Cesarean Section

Vaginal Bleed

- General Management
  - Do not pack the vagina
  - Treat for Shock as indicated
  - Consider TXA
- Differential:
  - Traumatic: simultaneously address Trauma and Obstetrics and Gynecology
  - Non-traumatic
    - Not Pregnant (not known to be pregnant prior to bleed)
      - Consider early/ unidentified pregnancy (and potential miscarriage)
        - Supportive care
        - Transport fetal parts/ blood clots to receiving if possible
      - Consider Ectopic Pregnancy and ensure patient to be transported to facility with OR capabilities
    - Pregnant
      - Placental Abruption: no specific treatment
      - Placenta Previa:
        - Magnesium Sulfate preferred for tocolytic therapy: 4g IV over 30min loading dose, 2-4g/hr maintenance infusion
          (Terbutaline should be avoided)
  - Related to Delivery
    - Hemorrhage During Delivery
      - Do not administer Oxytocin until placenta delivers
    - Post-Partum Hemorrhage
      - Fundal massage
      - Encourage breast feeding
      - Oxytocin: 20-40mu/min or 10u IM once
        [mix 10u in 1000ml NS or LR, 120-240ml/hr]

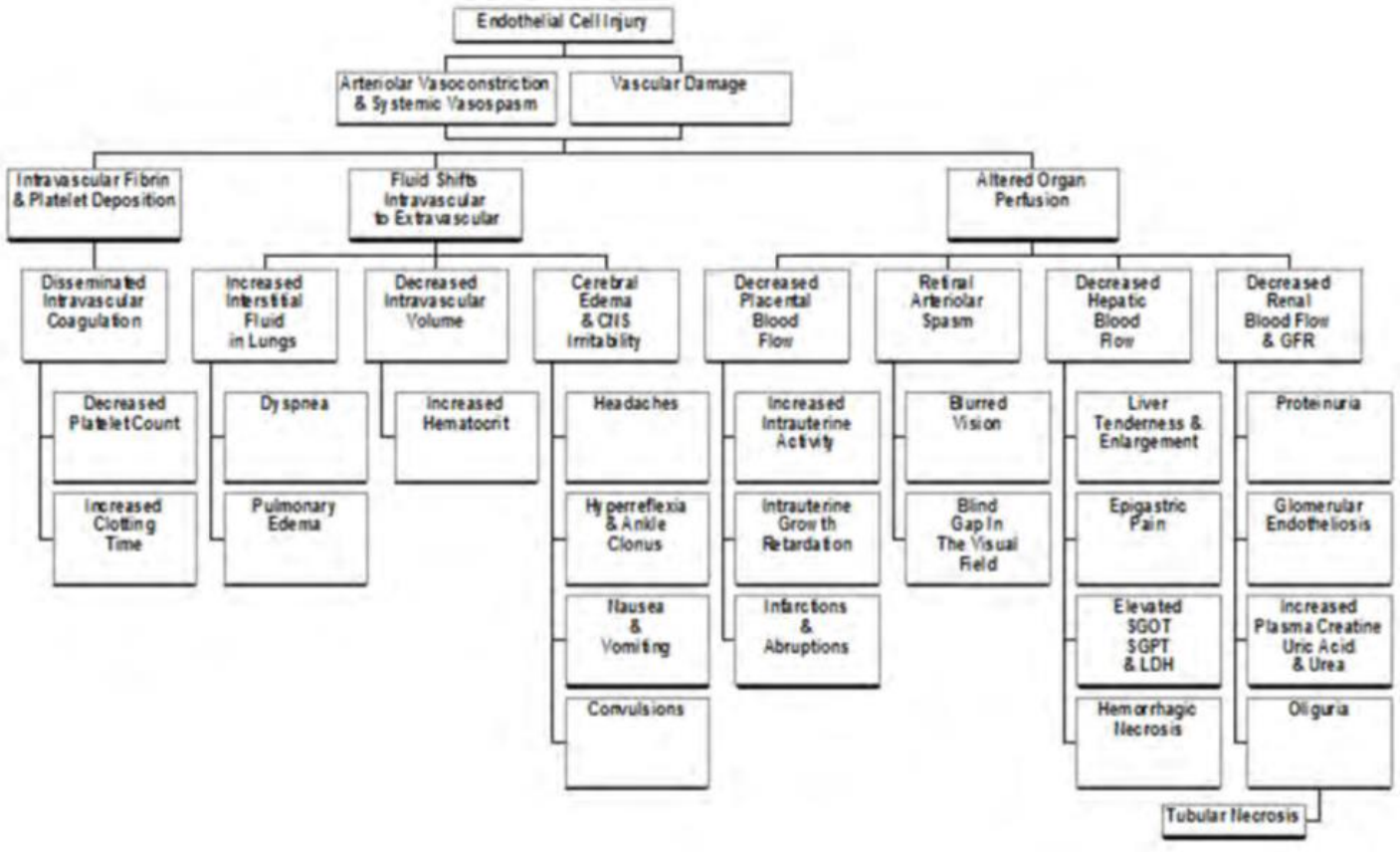
Ectopic Pregnancy

- Patient to be transported to facility with OR capabilities
- TXA only to be considered with clinically significant bleed

Pregnancy Induced Hypertension, (Pre-)Eclampsia and HELLP Syndrome

- Seizure Prevention
  - Magnesium Sulfate loading dose: 4g IV over 20min
  - Followed by maintenance infusion: 2-4g/hr IV
- Magnesium Toxicity (decreased DTRs, decreased LoC), treat Hypermagnesemia (also see Neurologic: Scoring DTRs)
  - Stop Magnesium Sulfate and do not restart for at least 1 hour
  - Calcium Chloride: 1g IV over 2-5min, once
  - Calcium Gluconate: 1-2g IV over 2-5min, once
- Hypertension (treat SBP >160 or DBP >110, do not drop SBP to <100)
  - Labetalol: 20mg IV over 2-5min, may repeat q 10min at 40mg, then 80mg; after that, proceed to another antihypertensive
  - Hydralazine: 10mg IV, repeat as needed to 4 total doses
- Pulmonary edema
  - Avoid diuretics
  - Maintain elevated head of bed
  - Consider PPV/ Non-Invasive Positive Pressure Ventilation
- Active seizures
  - Magnesium Sulfate 4g IV over 20min, followed by infusion at 2-4g/hr
  - Midazolam if seizures continue after 20min: 2.5 - 5mg IV/IM/IN, repeat as needed
- With concern for HELLP, consider transport to facility that carries blood and/ or has an ICU

Figure 13. Pathophysiologic Changes in Severe PIH



Preterm Labor & Tocolytics

- Not all cases of preterm labor require tocolytics, but they should be utilized in cases where the delay of delivery may result in an improved outcome for baby and/ or mother
- Consider relative contraindications to tocolysis and determine treatment strategy:
    - Fetal demise or anomalies incompatible with life
    - Fetal distress
    - Premature Rupture of Membranes
    - Pre-eclampsia/ Hypertension
    - Severe bleeding or placental abruption
    - Severe intrauterine growth retardation (IUGR)
    - Chorioamnionitis
    - Cervical dilation >5cm
    - Heart disease/ tachycardia
    - Hypersensitivity to medication(s) used
    - Trauma
- IV Fluids (preterm labor often due to dehydration)
- Magnesium Sulfate
    - Loading dose: 4g IV over 20min
    - Maintenance infusion: 2-4g/hr
- Terbutaline: 0.25mg IM, may repeat to 3 total doses or until Magnesium Sulfate is ready
- Continue Terbutaline or Ritodrine Infusions if initiated by sending facility
- Magnesium Toxicity (decreased DTRs, decreased LoC), treat Hypermagnesemia (also see Neurologic: Scoring DTRs)
    - Stop Magnesium Sulfate and do not restart for at least 1 hour
    - Calcium Chloride: 1g IV over 2-5min, once
    - Calcium Gluconate: 1-2g IV over 2-5min, once

Standard Delivery

- Prepare for simultaneous care of both mother and newborn
- Attempt to maintain sterility of procedure as possible
- As baby is delivered, perform the following simultaneously
    - Support head
    - Suction mouth first, then nose
    - Assess for nuchal card (and remove, if needed)
    - Continue treatment of newborn per Management of the Newborn
- As newborn is assessed and treated
    - Clamp and cut umbilical cord
    - Facilitate delivery of placenta (normally within 15min of delivery of the newborn)
        - Do not pull on the umbilical cord
        - Assess placenta and/ or transport to receiving facility (in paper bag)
        - With evidence of uterine prolapse
            - Manually replace uterus with gloved hand
            - Maintain that position and transport patient to facility with OR capabilities
- Continue to assess mother and monitor for Post-Partum Hemorrhage, treat per Vaginal Bleeding
    - Fundal massage
    - Encourage breast feeding
    - Oxytocin: 20-40mu/min or 10u IM once
      [mix 10u in 1000ml NS or LR, 120-240ml/hr]

Abnormal Delivery

- Prolapsed Umbilical Cord
- Shoulder Dystocia
- Breech Delivery

Prolapsed Umbilical Cord

- Position patient in knee-chest position or lateral Sim's position
- Lift presenting part off of umbilical cord and maintain this position during flight
- Administer tocolytics (Preterm Labor and Tocolytics)
- Do not manually replace the cord

Shoulder Dystocia

- Do not pull, push or pivot the baby during delivery (other than as outlined in specific maneuvers)
- Consider techniques of ALARMER mnemonic
    - **A**sk for help
    - **L**ift/ hyperflex legs (McRobert's Maneuver)

Figure 1- McRobert's manoeuvre

    - **A**nterior shoulder disimpaction
        - Abdominal approach (Mazzanti Maneuver)

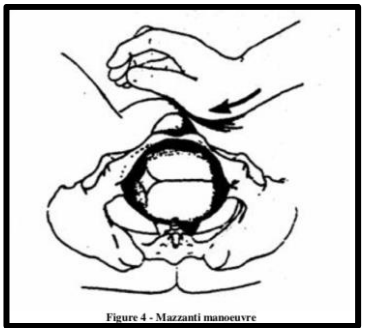


Figure 4 - Mazzanti manoeuvre

- Vaginal approach (Rubin Manuever)

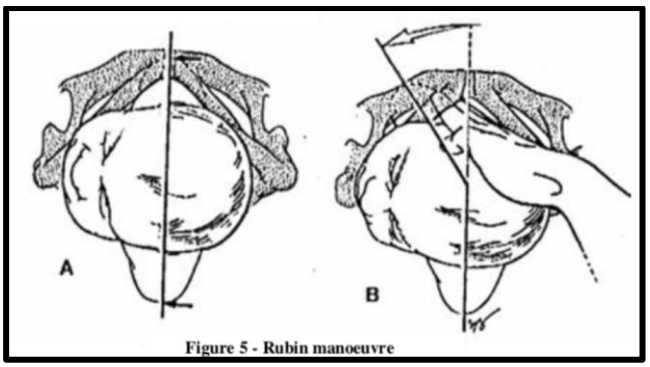


Figure 5 - Rubin manoeuvre

- **R**otation of the posterior shoulder (Wood's Maneuver)

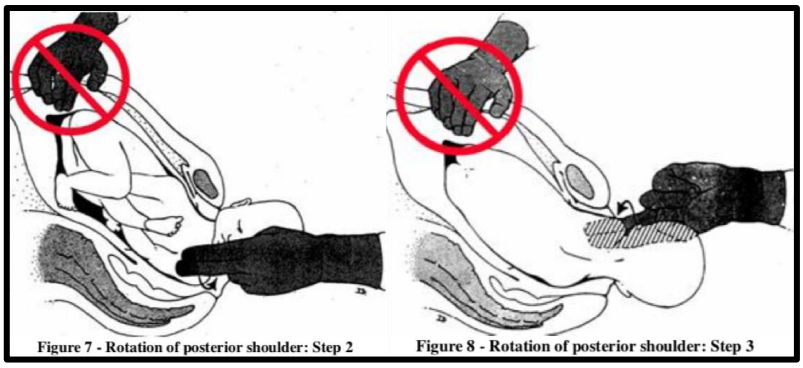


Figure 7 - Rotation of posterior shoulder: Step 2

Figure 8 - Rotation of posterior shoulder: Step 3

- **M**anual removal posterior arm

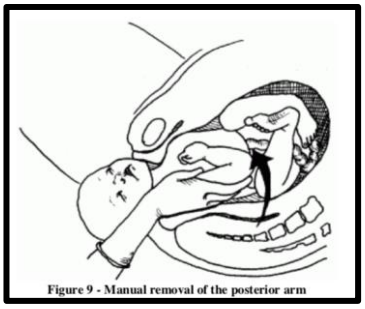


Figure 9 - Manual removal of the posterior arm

- **E**pisiotomy (only if all maneuvers, to include deliberate fracture of the clavicle, fail to result in delivery of the baby)
- **R**oll over onto "all fours" (Gaskin Maneuver)

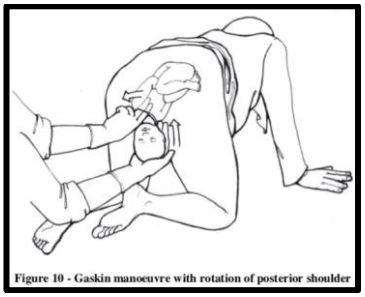


Figure 10 - Gaskin manoeuvre with rotation of posterior shoulder

- Consider deliberate fracture of the clavicle

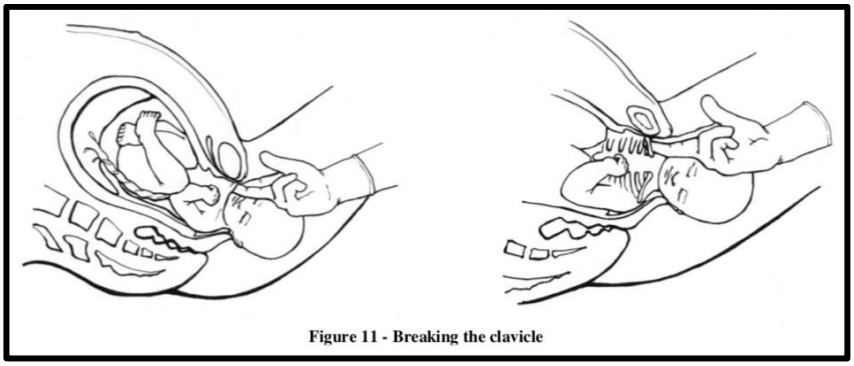


Figure 11 - Breaking the clavicle

Breech Delivery

- Ensure adequate analgesia (Pain, Agitation & Nausea)
- Encourage pushing (by mother)
- Do not pull on the baby
- If legs do not deliver spontaneously, consider Pinard Manuever

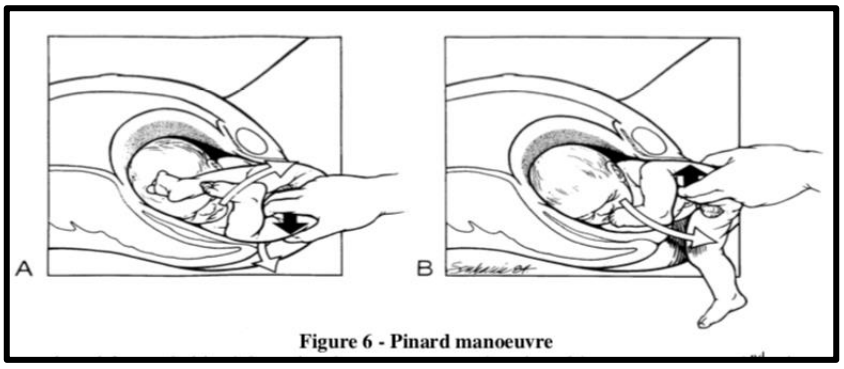


Figure 6 - Pinard manoeuvre

- Episiotomy may be considered once anterior buttock and anus are "crowning"
- Support baby at hips, have mother push until scapula are visible

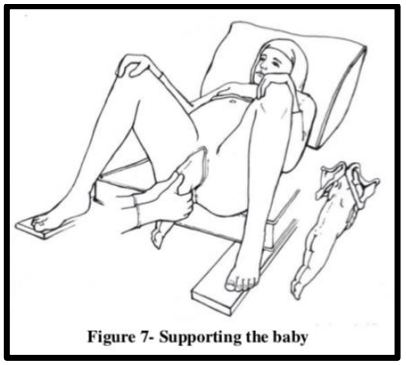
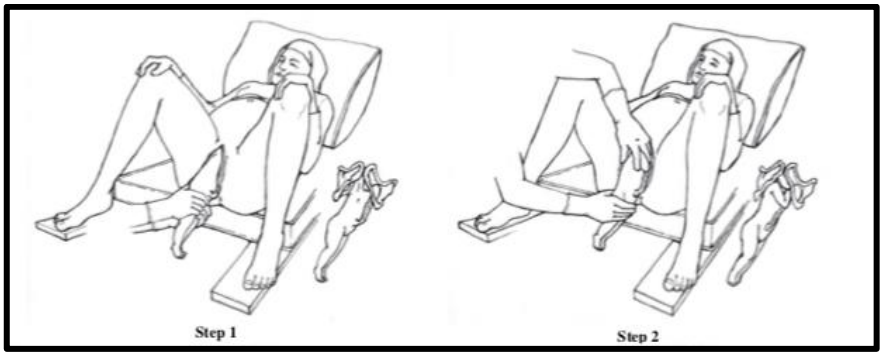
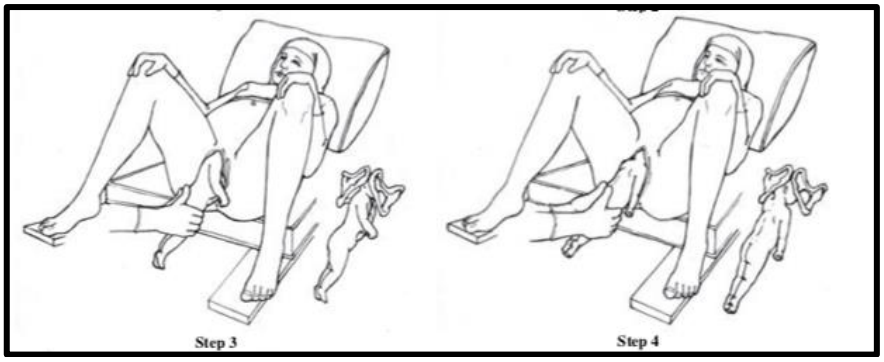
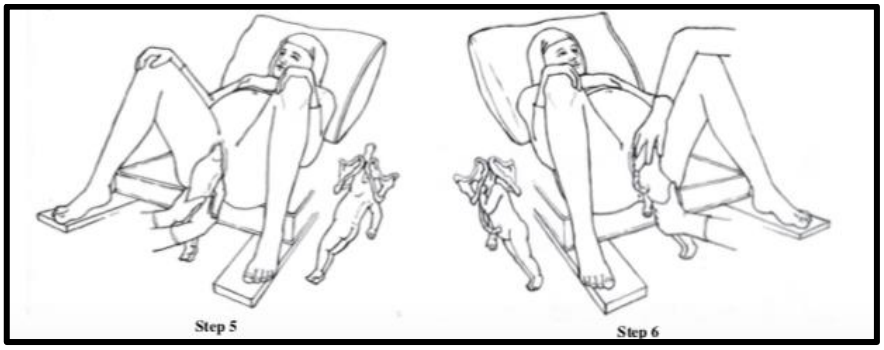


Figure 7- Supporting the baby

- Rotate body to facilitate delivery of arms over the chest (Loveset Manuever)







- Support baby with head in flexed position, encourage mother to push until nape of baby's neck appears

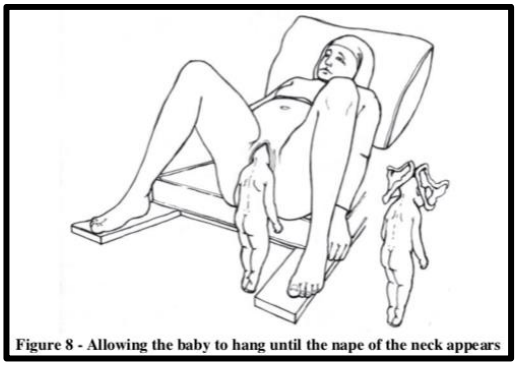


Figure 8 - Allowing the baby to hang until the nape of the neck appears

- Deliver the head via Mariceau-Smellie-Veit Maneuver
    - Maintain head in a flexed position with fingers over baby's chin/ face
    - Simultaneously apply suprapubic pressure (to mother)

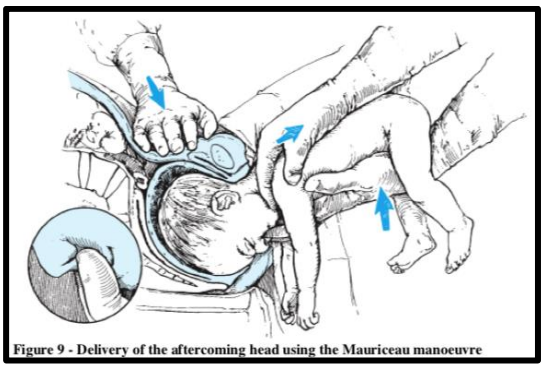


Figure 9 - Delivery of the aftercoming head using the Mauriceau manoeuvre

- With head entrapment, maintain baby's airway and transport to OR for symphysiotomy or cesarean section